

On Feb. 6 clouds hid the nucleus. The tail passed over  $\beta$  *Sculptoris*,  $\kappa$ ,  $\mu$ ,  $\beta$  and  $\delta$  *Phœnicis* and  $\chi$  *Eridani*, terminating near  $\phi$  *Eridani*.

Feb. 7.—Nucleus so close to  $\gamma$  *Sculptoris* that to the naked eye it appeared as if this small star constituted the nucleus. In the 3-inch refractor, with a power of 50 or 60, the nucleus at 8<sup>h</sup> 30<sup>m</sup> was *nf* the star at a distance of a little less than half the field. At 9<sup>h</sup> 15<sup>m</sup> the nucleus was one-third of the field from the star, and was observed till 9<sup>h</sup> 20<sup>m</sup> when it was apparent that it would not transit over  $\gamma$  *Sculptoris* but would pass a little to the east. The coma was not distinguishable from the nucleus, but was condensed at the centre. The tail extended from  $\gamma$  *Sculptoris* nearly to  $\kappa$  *Eridani*, passing north of  $\alpha$  *Phœnicis*, over  $\nu$  and another small star near  $\chi$  *Phœnicis*.

Feb. 8.—The comet, on account of increasing faintness, was not visible till 7<sup>h</sup> 50<sup>m</sup>, and the nucleus was only found, after much search, at 8<sup>h</sup> 40<sup>m</sup>, about 5° E. by N. of  $\gamma$  *Sculptoris*, in R.A. 23<sup>h</sup> 30<sup>m</sup>, Dec. 35° S. approximately. The difficulty in finding it arose from the circumstance that the tail appeared to start from a point a little above the nucleus, the faint light of the comet being obscured near the horizon. The tail passed over  $\epsilon$  and  $\gamma$  *Phœnicis*, and, passing a little to the right of  $\kappa$  *Eridani*, extended right across the constellation *Microscopium*. The light had now become so faint that the comet might easily escape observation.

Feb. 9.—Cloudy. Comet not seen.

Feb. 10.—Evening still cloudy. Comet visible for short intervals. The nucleus was seen in the telescope almost in the same field with  $\theta$  *Sculptoris*. The tail passed over  $\iota$ ,  $\theta$  and  $\epsilon$  *Eridani*, and across the constellation *Horologium*.

Feb. 11.—Cloudy. Comet not seen.

Feb. 12.—Cloudy. A slight hazy light to be seen now and then through openings in the clouds.

The tail after the first evening was perfectly straight and colourless.

*Observations of the Great Southern Comet 1880, I. made at the Cape of Good Hope, Feb. 2 to Feb. 15. By David Gill, Esq.*

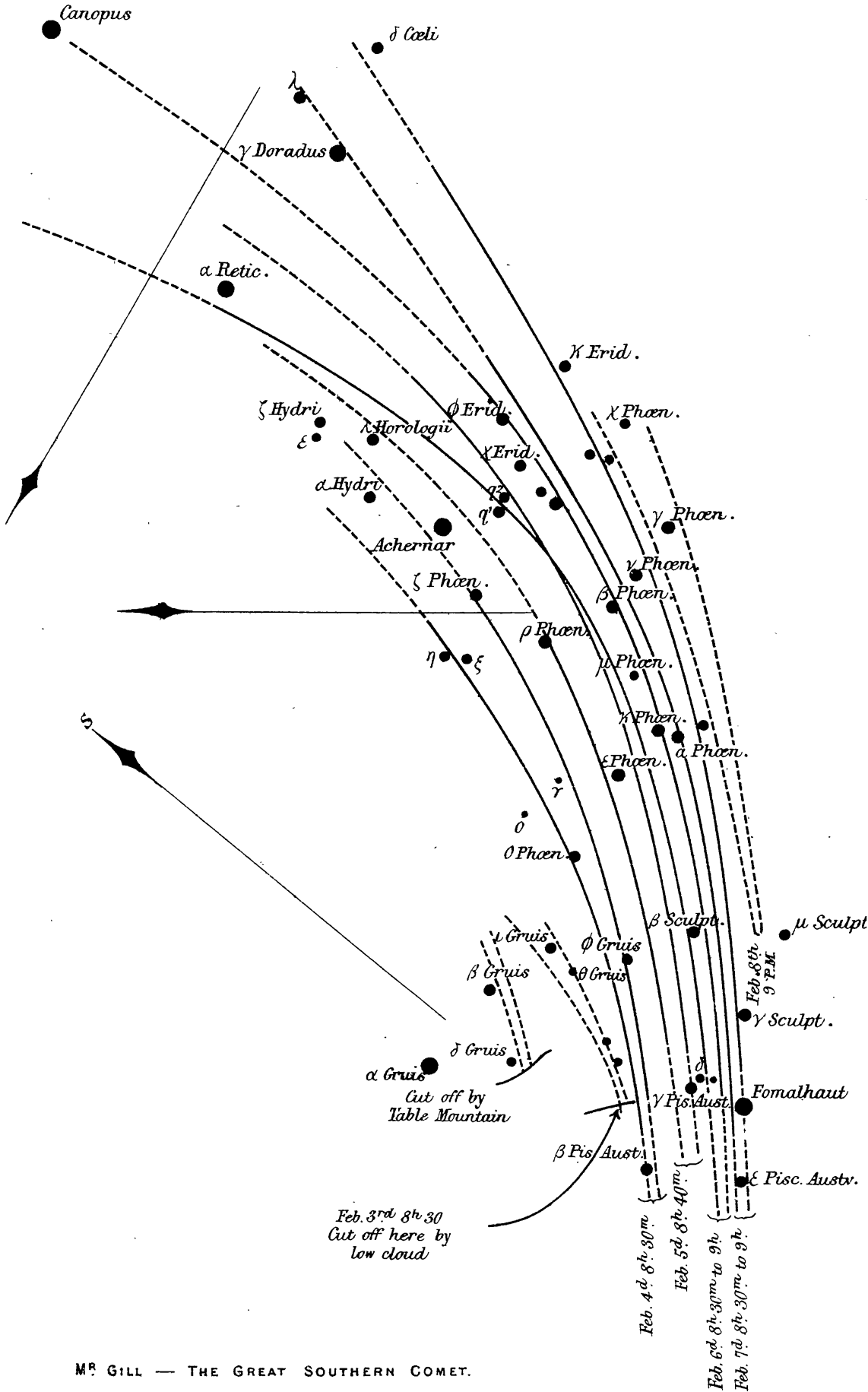
(Extracts from letters to the Astronomer Royal.)

By last mail I wrote to tell you that we have a comet by the tail, and I am sorry to say that we only have him by the tail still.

To get any observations at all it was necessary to go to Sea Point, to command the sea horizon to the S.W. of Table Mountain. I selected Mr. Henry Solomon's Garden as the best site, and the site where Maclear observed Donati's Comet in 1858.

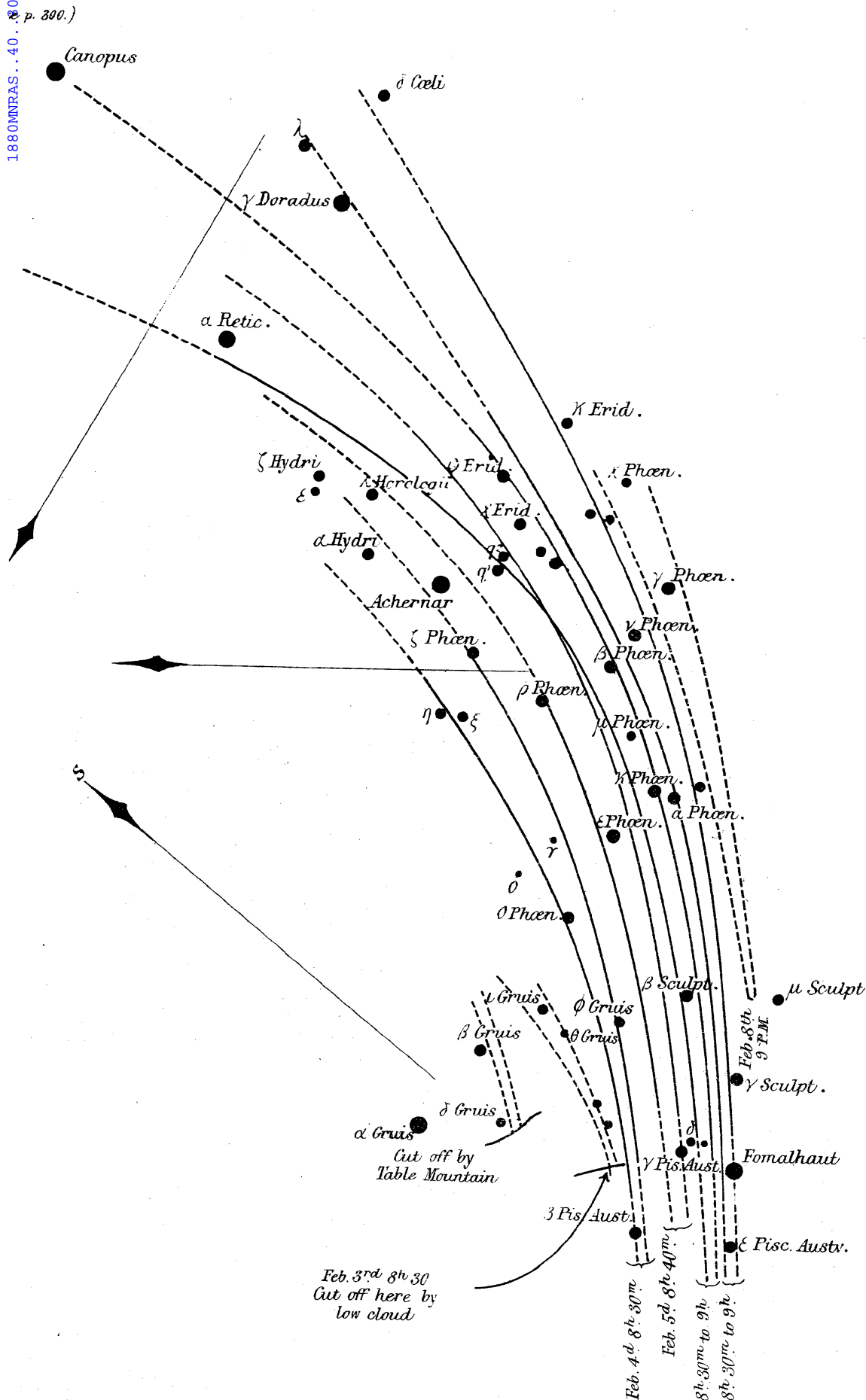
I took the Dollond 10-inch altazimuth and a couple of chronometers there on the evening of Tuesday the 3rd inst., but the horizon was somewhat hazy and  $\beta$  *Piscis Australis* could hardly be made out, and the tail could not be traced so far.

(face p. 300.)



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MR GILL — THE GREAT SOUTHERN COMET.



February 4 was a very fine night, except for a low bank of cloud on horizon. I could not make quite certain as to how the comet's tail passed  $\beta$  *Piscis Australis*. The rest of the drawing is very accurate.

February 5 and 6.—Very fine. On the latter day the tail had a curious curve. Drawings very accurate, except where outline is dotted.

February 7.—Less fine, and comet fainter. Some uncertainty about limit of comet. I certainly saw no nucleus, but others up country say it was seen.

February 8 was a cloudy night. In a break of cloud I picked up with an opera-glass a nebulous nucleus, with no well-defined point to the south of  $\mu$  *Sculptoris*; but before I could bring the altazimuth to bear, the cloud had formed over the spot.

February 9.—From the faintness of the nucleus it seemed quite useless to attempt further observations with a portable telescope, so I remained here last night. We had only a glimpse of the nucleus with an opera-glass for a few seconds, and afterwards saw the tail portion by portion; but even before the nucleus could be got into the field of the finder the cloud had obscured it. The nucleus set, at about 9 o'clock last night, behind the highest peak of Table Mountain (the Devil's Peak). To-night I hope we shall have better luck, but the nucleus does not look like an object permitting very accurate observation. The drift of the comet seems to be southwards; I did not, therefore, think it necessary to incur the cost of a telegram to you, but I should be glad to have your opinion for my future guidance.

I do very sincerely trust we shall get three good observations sufficient to give an orbit exact enough for the period during which I drew the tail. The boundary of the tail was exceedingly well marked. I send a rough tracing from my drawings.

*Royal Observatory, Cape of Good Hope,*  
1880, February 10.

We have now secured observations of the comet on February 10, 11, 12, 13, 14, 15, with the following approximate results.

	COMET I., 1880.		
	Cape M.T.	R.A.	N.P.D.
	h	h m	° '
February 10	9 $\frac{1}{4}$	0 4	123 43
11	8 $\frac{3}{4}$	0 21	123 31
12	9	0 37	123 11
13	8 $\frac{1}{2}$	0 52	122 44
14	8 $\frac{3}{4}$	1 6	122 10
15	8 $\frac{1}{2}$	1 20	121 34

On February 11, 13, and 15, we have comparison stars whose places are well determined.

*Royal Observatory, Cape of Good Hope,*  
1880, February 17.

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